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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/535,166	05/16/2005	Jorg Heuer	112740-1083	2385
29177 7590 05/24/2007 BELL, BOYD & LLOYD, LLP P.O. BOX 1135 CHICAGO, IL 60690			EXAMINER LUCARELL, WILLIAM E	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/535,166	Applicant(s) HEUER ET AL.	
	Examiner William E. Lucarell	Art Unit 2160	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 Jun 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-20 are cancelled.
2. Claims 21-34 are pending:

Oath/Declaration

3. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:

Dr. Harald Kosch only signed the left side of the oath on Page 4.

Specification

4. The disclosure is objected to because of the following informalities:

The background should be split in two sections – ***Technical Field of the Invention*** and ***Description of Related Art***.

The phrase “the entries in the *index nodes* specific node information is read out from the stream until the ...” (page 25, lines 1-2) should be changed to “the entries in the *index node*’s specific node information is read out from the stream until the ...”

Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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6. Claims 21-34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claim 21, the phrase "the index data of ***that child node which follows first node after the parent in the indexing tree***". The Examiner interprets it as "the index data of that child node which follows the parent node in the indexing tree". The wording in Claim 21 is unclear; thus, the claim is rejected.

Claims 22-34 are rejected for failing to cure the deficiency of the above rejected claim 21.

Claim 32 contains the trademark ***XPATH***. Where a trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of 35 U.S.C. 112, second paragraph. See *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982). The claim scope is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product. A trademark or trade name is used to identify a source of goods, and not the goods themselves. Thus, a trademark or trade name does not identify or describe the goods associated with the trademark or trade name. In the present case, the trademark/trade name is used to identify/describe document formats, and, accordingly, the identification/description is indefinite.

Claim Rejections - 35 USC § 101

7. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

8. Claims 21-34 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

As per claim.21, the Applicant claims a method for generating a bit stream, which is a data structure. Even though the method has a practical application, it lacks the necessary hardware to store the data structure. Thus, claim 21 fails to form the basis of statutory subject matter under 35 U.S.C. 101

Claims 22-34 are rejected for failing to cure the deficiencies of the above rejected claim 21.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims 21, 24-26, 28, 29, 31, and 32 are rejected under 35 U.S.C. 102(e) as being anticipated by Chan et al (US 2004/0010752 A1).

As per claim 21:

Chan et al teach:

A method for generating a bit stream, where “an Xpath Expression (XPE) that treats an XML document” (page 3, paragraph [0031], lines 7-9) which is “streaming”

(page 9, paragraph [0116], as a “tree of nodes” (page 3, paragraph [0031], lines 7-9) is “a bit stream” as claimed; and “building an XPE tree” (page 1, paragraph [0008], lines 7-8) is “generating a bit stream” as claimed.

Providing an indexing tree (page 4, paragraph [0045], line 4), where “an XPE-tree” is an “indexing tree” as claimed.

A plurality of hierarchy levels with each hierarchy level being assigned one or more index nodes (page 3, paragraph [0031], lines 2-4, where “a root element and sub-elements of an element” illustrate a “plurality of hierarchy levels with each hierarchy level being assigned one or more index nodes” as claimed.

The index nodes contain index data, which is sorted in the indexing tree according to one or more predetermined criteria (page 4, paragraph [0044], lines 9-12), where “nodes in the XPE tree of p” are “index nodes containing index data” as claimed; and Figure 2A illustrates a tree which is sorted from the beginning of “p=/a/b[c/d//e][g//e/f]/*/*e/f” depth-first. The order of data in “XPE p” is the “predetermined criteria” as claimed.

Designating an index node as a parent node (page 3, paragraph [0031], line 3), where “starting with a root element” is “designating an index node as a parent node” as claimed.

Designating other index nodes as child nodes, with at least one child node branching off from the parent node and said child node being located in a lower hierarchy level (page 3, paragraph [0036], line 4), where “d-prime ... parent node of d” are “at least one child node branching off from a parent node” as claimed; “d-prime” is

the parent node as claimed; "d" is "designated as a child node on a lower hierarchy level" as claimed.

Inserting index data of the index nodes into the bit stream, where "XPE 200 where p=/a/b[c/d//e][g//e/f]/*/*/e/f" (page 4, paragraph [0044], lines 10-12) is "index data of the index nodes" as claimed; and "building an XPE tree" (page 1, paragraph [0008], lines 7-8) is "inserting index data" as claimed.

Following insertion of the index data in the parent node, the index data of that child node which follows the parent node on account of the sorting is inserted without information indicating at which position the index data of said child node is located in the bit stream, where "/a" (page 4, paragraph [0044], line 11 and Figure 2A) is the "index data of the parent node" as claimed, and "/b" (page 4, paragraph [0044], line 11 and Figure 2A) is the "index data of the child node which follows the parent node on account of the sorting without information indicating at which position the index data of said child node is located in the bit stream" as claimed. Figure 2A illustrates the positions of aforementioned nodes "/a" and "/b" in the tree.

Inserting information into the bit stream in each case for the child node which does not follow first after the parent node (page 4, paragraph [0044], lines 10-12), where "[c/d//e], [g//e/f], etc – which come after 'a' and 'b' in the bit stream," are "child nodes which do not follow first after the parent node that are inserted into the XPE-tree" as claimed.

Said information indicating at which position in the bit stream the index data of said child node is located, where "brackets, which refine a set of nodes,"

(page 3, paragraph [0033], lines 1-6) comprise "information indicating at which position in the bit stream index data is located" as claimed; and "[c/d//e] and [g//e/f] in the XPE" are "index data in the bit stream of said child node" enclosed in "brackets" (page 4, paragraph [0044], lines 10-12), which is "information indicating at which position in the bit stream the index data is located" as claimed.

As per claim 24:

The rejection of claim 21 is incorporated, and Chan et al further teach ***index data is inserted into the bit stream according to the depth-first ordering principle*** (page 4, paragraph [0044], lines 9-12 and Figure 2A), where "p=/a/b[c/d//e][g//e/f]/*/*e/f" is "index data inserted into the bit stream" as claimed. Figure 2A illustrates how the data of "p" is inserted into the XPE tree (or "bit stream" as claimed) "according to the depth-first principle" as claimed. Before filling a sibling node, any elements enclosed in brackets ([]), in this case "/c/d//e", are inserted from top to bottom. Then the sibling node is filled with the first data ("g") from the next predicate expression ("g//e/f"). Data "//e" is placed below "g", and data "/f" is placed below "//e". The above illustrates "depth-first ordering" as claimed.

As per claim 25:

The rejection of claim 21 is incorporated, and Chan et al further teach ***comprises paths of a document structure tree consisting of at least one root node and a plurality of leaf nodes*** (page 3, paragraph [0032], lines 10-12), where "the XPE" is a "path" as claimed; and "document root element a and its children" form "a document

structure tree consisting of at least one root node and a plurality of leaf nodes” as claimed.

As per claim 26:

The rejection of claim 25 is incorporated, and Chan et al further teach ***index data containing the value instances of the paths and the positions of the value instances in the document which is represented by the document structure tree*** (page 4, paragraph [0044], lines 10-12), where “p=/a/b[c/d//e][g//e/f]//*/*/e/f” is “index data” as claimed; “/a and /b” are “value instances of the paths” as claimed; “brackets [] identify the “positions of the value instances in the document” as claimed; and “document root element a and its children” (Figure 2A) form a “document structure tree” as claimed.

As per claim 28:

The rejection of claim 25 is incorporated, and Chan et al further teach ***absolute paths*** (page 3, paragraph [0032], line 2) ***which start from the root node and lead to a leaf node*** (page 3, paragraph [0032], lines 6-8), where “parent-child operators” describe a root node being connected to a leaf node” as claimed.

As per claim 29:

The rejection of claim 25 is incorporated, and Chan et al further teach ***relative paths, a relative path of a respective index node being a path relative to another path, previously inserted into the bit stream, of the index node or of an index node of a hierarchy level above the hierarchy level of the respective index node*** (page 4, paragraph [0044], lines 10-12 and Figure 2A), where “XPE 200” already

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constructed construes "index nodes previously inserted into the bit stream" as claimed; "/b" is the "respective index node" as claimed; the "path from /b to /c in Figure 2A" relative to the "path from /b to /g in Figure 2A" is a "path of a respective index node relative to another path of *the index node* or of an index node of a hierarchy level above the hierarchy level of the respective index node" as claimed.

As per claim 31:

The rejection of claim 25 is incorporated, and Chan et al further teach ***the paths comprise description elements of an XML document*** (page 3, paragraph [0031], lines 10-12), where and "nodes in the XML data tree" are "description elements of the XML document" as claimed; and "XPE's" are "paths" as claimed.

As per claim 32:

The rejection of claim 31 is incorporated, and Chan et al further teach ***the paths are XPATH paths of the XML document*** (page 3, paragraph [0031], lines 10-12).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chan et al (US 2004/0010752 A1) in view of Johnson (US 5,557,786).

As per claim 22:

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The rejection of claim 21 is incorporated. Chan et al do not specifically teach a ***balanced tree***. However, Johnson teaches the above limitation (Abstract, lines 7-8), where "a tree maintained in height-balanced condition" is "a balanced tree" as claimed.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate Johnson's teachings into Chan's system. The modification would be obvious because one of ordinary skill in the art would be motivated to search a document in the quickest possible manner.

As per claim 23:

The rejection of claim 22 is incorporated. Chan et al do not specifically teach ***sorting index data lexicographically in an indexing tree***. However, Johnson teaches the above limitation (column 3, lines 57-61), where arranging a tree where "entries are linked by right link pointers in the rightward direction to alphabetical successors and entries are linked by left link pointers in the leftward direction to alphabetical predecessors" is "sorting index data lexicographically" as claimed.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate Johnson's teachings into Chan's system. The modification would be obvious because one of ordinary skill in the art would be motivated to order a list of people without giving status preference.

13. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chan et al (US 2004/0010752 A1) in view of Mah et al (US 7,020,643).

As per claim 27:

The rejection of claim 25 is incorporated. Chan et al do not specifically teach ***index data comprising the number of paths in an index node***. However, Mah et al teach the above limitation, where “the counters associated with a particular node indicate the number of full paths or subpaths ... that include the particular node” is “index data comprising the number of paths in an index node” as claimed.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate Mah’s teachings into Chan’s system. The modification would be obvious because one of ordinary skill in the art would be motivated to search every part of a data structure to obtain requested data.

14. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chan et al (US 2004/0010752 A1) in view of Fisher et al (US 2004/0032422).

As per claim 30:

The rejection of claim 29 is incorporated, and Chan et al further teach ***paths inserted into the bit stream are the paths of the index node***, where “index node /b, which is the first and only index node,” (Figure 2A) is “the index node whose index data is inserted into the bit stream as the first index data of a hierarchy level” as claimed; and paths from “/b to /c” and “/b to /g” (Figure 2A) are “paths inserted ... hierarchy level” as claimed. Chan et al do not specifically teach ***index data is inserted into the bit stream as the first index data of a hierarchy level in a reverse sequence to the sequence in which the index data is arranged in the index node***. However, Fisher et al teach the above limitation (page 4, paragraphs [0062] through [0064]), where performing a “reversal traversal of scene graph 210” -- which has order “A, B, C, D, F,

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G, H, E, I, J, K” – and obtaining order “K, J, I, E, H, G, F, D, C, B, A” is “a reverse sequence to the sequence in which the index data is arranged in the index node” as claimed. The data can be “inserted into the bit stream s the first index data of a hierarchy level” as claimed.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate Fisher's teachings into Chan's system. The modification would be obvious because one of ordinary skill in the art would be motivated to speed up searches of file systems.

15. Claims 33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chan et al (US 2004/0010752 A1) in view of Walker et al (US 2003/0028557 A1).

As per claim 33:

The method of claim 21 is incorporated. Chen et al do not teach ***index data coded in binary by means of a coding method, in particular by means of an MPEG coding method***. However, Walker et al teach the above limitation (page 5, paragraph [0038], lines 1-2), where “encoding MPEG-7 access units” is “coding index data by means of an MPEG coding method” as claimed; and “BiM” is “in binary format” as claimed.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate Walker's teachings into Chan's system. The modification would be obvious because one of ordinary skill in the art would be motivated to store data in a video format on a computer.

As per claim 34:

The method of claim 33 is incorporated. Chen et al do not teach **an MPEG-7 coding method**. However, Walker et al teach the above limitation (page 5, paragraph [0038], lines 1-2), where "encoding MPEG-7 access units" is "an MPEG coding method" as claimed.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate Walker's teachings into Chan's system. The modification would be obvious because one of ordinary skill in the art would be motivated to use metadata to synchronize lyrics to a song.

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

TITLE: Streaming metatree data structure for indexing information in a data base, US 6,721,723 B1

TITLE: Audio/video retrieval system that uses keyword indexing of digital recordings to display a list of the recorded text files, keywords, and time stamps associated with the system, US 5,794,249

TITLE: Method for streaming Xpath processing with forward and backward axes, US 7,171,407 B2

TITLE: Method for converting CCITT compressed data using a balanced tree, US 5,509,088

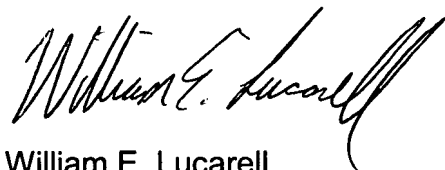
TITLE: Method and apparatus for managing a set of data structures associated with a large file, US 7,133,877 B2

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TITLE: Method for transmitting data using an embedded bit stream produced in a hierarchical table-lookup vector quantizer, US 6,345,126 B1

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to William E. Lucarell whose telephone number is 571-270-3168. The examiner can normally be reached on Monday-Thursday from 7:00 A.M. to 5:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor Chameli Das can be reached at 571-272-3696. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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